

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: JAMES LIN Examiner #: 82271 Date: 2-28-06
 Art Unit: 1762 Phone Number 36 Serial Number: 10/630,165
 Mail Box and Bldg/Room Location: 8D49 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): _____

Earliest Priority Filing Date: _____

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

PLEASE SEE ATTACHED CLAIMS.

STAFF USE ONLY		Type of Search	Vendors and cost where applicable
Searcher:	<u>EZ</u>	NA Sequence (#)	STN <u>\$ 291.38</u>
Searcher Phone #:		AA Sequence (#)	Dialog
Searcher Location:		Structure (#)	Questel/Orbit
Date Searcher Picked Up:		Bibliographic	Dr.Link
Date Completed:	<u>3-3-06</u>	Litigation	Lexis/Nexis
Searcher Prep & Review Time:	<u>10</u>	Fulltext	Sequence Systems
Clerical Prep Time:		Patent Family	WWW/Internet
Online Time:	<u>80</u>	Other	Other (specify)

WE CLAIM:

1. A method for vapor-depositing a layer of a needle-shaped x-ray luminophore with at least one alkali metal on a carrier, said method comprising providing a carrier, simultaneously vaporizing a mixture of at least one europium(III) oxyhalogenide with at least one alkali halogenide and vapor-depositing the vapor on the carrier.
2. A method according to claim 1, wherein the step of simultaneously vaporizing utilizes a molybdenum vaporizer.
3. A method according to claim 1, wherein the simultaneously co-vaporization of the alkali halogenide with the europium(III) oxyhalogenide, the ratio of the Eu concentration of the alkali halogenide layer in the proximity of the substrate to the Eu concentration of the alkali halogenide layer in the proximity of the surface can be reproduced between a factor of 0.4 and 1.2.
4. A method according to claim 3, wherein the concentration is reproduced between a factor of 0.6 and 0.8.
5. A method according to claim 1, wherein the at least one europium(III) oxyhalogenide has a formula of Eu_3O_4Hal , wherein Hal is at least one halogenide from a group consisting of F, Cl, Br and I.
6. A method according to claim 5, wherein the alkali halogenide comprises at least one metal selected from a group consisting of Na, K, Rb and Cs and at least one halogenide from the group F, Cl, Br and I.
7. A method according to claim 1, wherein the x-ray luminophore occurs according to the following formula:



wherein A is an alkali metal from a group consisting of Na, K, Rb and Cs; B and C are at least one halogenide from a group consisting of F, Cl, Br and I; wherein C can equal 0 and D

and E are at least one halogenide from a group consisting of F, Cl, Br and I, wherein A, D and/or E can be equal.

8. A method according to claim 7, wherein the depositing of the layer on the carrier forms a storage luminophore plate.

ABSTRACT OF THE DISCLOSURE

A method forms a vapor-deposit layer of needle-shaped x-ray luminophore containing at least one alkali metal doped with europium on a carrier. The method includes placing a mixture of $\text{Eu}_2\text{O}_4\text{Hal}$ and at least one alkali halogenide in a molybdenum vaporizer, heating the mixture to simultaneously vaporize the mixture and to deposit it on a carrier, wherein Hal is at least one halogenide from a group consisting of F, Cl, Br and I. The ratio of the Eu concentration of the alkali halogenide layer in the proximity of the substrate to the Eu concentration of the alkali halogenide layer in the proximity of the surface can preferably be reproduced with a factor of 0.4 to 1.2, and preferably between 0.6 and 0.8.

Banks, Kendra

180887

From: JAMES LIN [james.lin@uspto.gov]
Sent: Tuesday, February 28, 2006 2:05 PM
To: STIC-EIC1700
Subject: Database Search Request, Serial Number: 10630165

Requester:
JAMES LIN (P/1762)

Art Unit:
GROUP ART UNIT 1762

Employee Number:
82271

Office Location:

Phone Number:

Mailbox Number:

Case serial number:
10630165

Class / Subclass(es):
427,255.39,64

Earliest Priority Filing Date:
7/30/03

Format preferred for results:
E-mail

Search Topic Information:
Europium(III) oxyhalogenide preferably with alkali halogenide

Eu.sub.3O.sub.4Hal, where Hal can be F, Cl, Br, and I

The alkali halogenide at least one metal from the group Na, K, Rb, and Cs; and at least one halogenide from the group F, Cl, Br, and I.

Special Instructions and Other Comments:

SCIENTIFIC REFERENCE BR
Sci & Tech Inf. Ctr

FEB 28 REC'D

Pat. & T.M. Office

=> file reg

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FILE 'HCAPLUS' ENTERED ON 03 MAR 2006

L1 11664 SEA FUCHS ?/AU
L2 692 SEA HELL ?/AU
L3 1361 SEA ROHRER ?/AU OR ROEHRER ?/AU
L4 3 SEA L1 AND L2 AND L3
SEL L4 1-3 RN

FILE 'REGISTRY' ENTERED ON 03 MAR 2006

L5 50 SEA (7440-53-1/BI OR 7787-69-1/BI OR 12514-47-5/BI OR
L6 4990 SEA (EU(L)O(L)X)/ELS
L7 24 SEA L6 (L) 3/ELC.SUB

FILE 'LREGISTRY' ENTERED ON 03 MAR 2006

L8 0 SEA (A1(L)A7)/ELS NOT ((A2 OR T1 OR T2 OR T3 OR LNTH OR
ACTN OR SHEL OR B2 OR A3 OR A4 OR A5 OR A6 OR A8)/PG OR
(H OR C)/ELS)
L9 33 SEA (A1(L)A7)/PG NOT ((A2 OR T1 OR T2 OR T3 OR LNTH OR
ACTN OR SHEL OR B2 OR A3 OR A4 OR A5 OR A6 OR A8)/PG OR
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L10 2221 SEA (A1(L)A7)/PG NOT ((A2 OR T1 OR T2 OR T3 OR LNTH OR
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(H OR C)/ELS)

FILE 'HCA' ENTERED ON 03 MAR 2006

L11 139 SEA L7
L12 265313 SEA L10
L13 14 SEA L11 AND L12
L14 175 SEA (EUROPIUM# OR EU) (A) (OXYHALOGENIDE# OR OXYHALIDE# OR
OXYFLUORIDE# OR OXYCHLORIDE# OR OXYBROMIDE# OR OXYIODIDE#
) OR (EUROPIUM# OR EU) (W) (OXIDE# (A) (HALIDE# OR HALOGENIDE
OR FLUORIDE# OR CHLORIDE# OR BROMIDE# OR IODIDE#)) OR
EUOF OR EUOCL OR EUOBR OR EUOI OR EUFO OR EUCLOR OR EUBRO
OR EUIO
L15 273968 SEA (ALK# OR ALKALI# OR LITHIUM# OR LI OR SODIUM# OR NA
OR POTASSIUM# OR K OR RUBIDIUM# OR RB OR CESIUM# OR
CS) (W) (HALIDE# OR FLUORIDE# OR CHLORIDE# OR BROMIDE# OR
IODIDE#)

L16 603048 SEA LIF OR LICL OR LIBR OR LII OR NAF OR NAACL OR NABR OR
NAI OR KF OR KCL OR KBR OR KI OR RBF OR RBCL OR RBBR OR
RBI OR CSF OR CSCL OR CSBR OR CSI
L17 21 SEA (L14 OR L11) AND (L15 OR L16 OR L12)
L18 21 SEA L13 OR L17

=> file hca

FILE 'HCA' ENTERED ON 03 MAR 2006

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=> d 118 1-21 cbib abs hitstr hitind

L18 ANSWER 1 OF 21 HCA COPYRIGHT 2006 ACS on STN
143:468293 Specific features of photoluminescence centers in
 $\text{CsBr}:\text{Eu}^{2+}$ crystals grown from melt. Zorenko, Yu. V.;
Turchak, R. M.; Konstankevich, I. V. (Optoelectronic Materials
Laboratory, I. Franko Lviv National University, Lvov, 79017,
Ukraine). Functional Materials, 11(4), 707-709 (English) 2004.
CODEN: FMUAB4. ISSN: 1027-5495. Publisher: National Academy of
Sciences of Ukraine, Institute for Single Crystals.

AB Specific formation features of isolated dipole centers (IDC)
 Eu^{2+} -VCs (impurity-cationic vacancy) and aggregate centers (a.c.) of
photoluminescence (PL) in $\text{CsBr}:\text{Eu}^{2+}$ crystals were studied.
These centers provide the PL with maxima in 435-450 nm and 490-520
nm regions. The centers causing the PL peaked at 490-520 nm are
formed within a narrow Eu^{2+} concn. range (0.01 to 0.1 mol.%) and at
temps. up to 180-200 degree.. Probably in the $\text{CsBr}:\text{Eu}^{2+}$
crystals, besides of the IDC responsible for the PL peaked at 440
nm, several a.c. types can be obsd., in particular, CsEuBr_3 and
 Cs_4EuBr_6 nanocrystals as well as EuBr_2 ppts.

IT 7787-69-1, Cesium bromide
(doped with europium; specific features of photoluminescence
centers in $\text{CsBr}:\text{Eu}^{2+}$ crystals grown from melt)

RN 7787-69-1 HCA

CN Cesium bromide (CsBr) (9CI) (CA INDEX NAME)

Br—Cs

IT 13843-47-5, Europium bromide
oxide (EuBr_2)
(specific features of photoluminescence centers in $\text{CsBr}:\text{Eu}^{2+}$ crystals grown from melt)

RN 13843-47-5 HCA
 CN Europium bromide oxide (EuBrO) (9CI) (CA INDEX NAME)

Br—Eu=O

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST luminescence photoluminescence europium doped **cesium bromide** crystal

IT Annealing
 (effect of; specific features of photoluminescence centers in **CsBr:Eu²⁺** crystals grown from melt)

IT Luminescence
 (specific features of photoluminescence centers in **CsBr:Eu²⁺** crystals grown from melt)

IT 7440-53-1, Europium, properties 16910-54-6, Europium Eu²⁺, properties
 (cesium bromide doped with; specific features of photoluminescence centers in **CsBr:Eu²⁺** crystals grown from melt)

IT 7787-69-1, Cesium bromide
 (doped with europium; specific features of photoluminescence centers in **CsBr:Eu²⁺** crystals grown from melt)

IT 13780-48-8, Europium bromide (EuBr₂) 664355-67-3, Cesium europium bromide (CsEuBr₃) 664355-83-3, Cesium europium bromide (Cs₄EuBr₆)
 (specific features of photoluminescence centers in **CsBr:Eu²⁺** crystals grown from melt)

IT 13843-47-5, Europium bromide
 oxide (EuBrO)
 (specific features of photoluminescence centers in **CsBr:Eu²⁺** crystals grown from melt)

L18 ANSWER 2 OF 21 HCA COPYRIGHT 2006 ACS on STN

142:337906 Scratch-resistant, moisture-protecting parylene coatings.

Van Den Bergh, Rudy; Cabes, Thomas (Belg.). U.S. Pat. Appl. Publ.

US 2005067584 A1 20050331, 11 pp. (English). CODEN: USXXCO.

APPLICATION: US 2004-939697 20040913. PRIORITY: EP 2003-103618 20030930; US 2003-2003/PV510908 20031014.

AB A coating, useful for phosphor sheets or panels, comprises at least two layers: a layer A, being a layer of parylene and a layer B, wherein layer B, optionally present at both sides of layer A, is characterized in that it based on an polymer coating contg. at least one phosphoric acid ester compd. to improve the adhesion between the parylene layer and the polymer coating. A typical coating compn. was prep'd. by dissolving 5 g Bu methacrylate-Me methacrylate copolymer in 25 g 1,6-hexanediol diacrylate, adding 25 g Laromer TMPTA and 45 g Ebecryl 1290 (hexafunctional urethane acrylate),

homogenizing, adding 3% Modaflow, dissolving 4 g each Darocur 1173 and benzophenone, and mixing 5 g Rhodafac 710 (dioctylphenyl polyethylene glycol phosphate) with 20 g resulting soln.

IT 7787-69-1, Cesium bromide
13843-47-5, Europium oxybromide

(phosphor component; scratch- and moisture-resistant parylene multilayer coatings contg. phosphate esters in nonparylene polymer layers for improved interlayer adhesion for phosphor panels)

RN 7787-69-1 HCA

CN Cesium bromide (CsBr) (9CI) (CA INDEX NAME)

Br—Cs

RN 13843-47-5 HCA

CN Europium bromide oxide (EuBrO) (9CI) (CA INDEX NAME)

Br—Eu=O

IC ICM G21K004-00

ICS B32B015-04; B32B007-12

INCL 250484400; 428343000; 428351000

CC 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): 73

IT 7787-69-1, Cesium bromide
13843-47-5, Europium oxybromide
(phosphor component; scratch- and moisture-resistant parylene multilayer coatings contg. phosphate esters in nonparylene polymer layers for improved interlayer adhesion for phosphor panels)

L18 ANSWER 3 OF 21 HCA COPYRIGHT 2006 ACS on STN

142:305705 Specific Features of Absorption and Luminescence in

CsBr:EuOBr Crystals. Zorenko, Yu. V.; Turchak, R.

M.; Konstankevich, I. V. (Franko National University, Lvov, 79044, Ukraine). Physics of the Solid State (Translation of Fizika Tverdogo Tela (Sankt-Peterburg)), 46(7), 1225-1230 (English) 2004.

CODEN: PSOSED. ISSN: 1063-7834. Publisher: MAIK

Nauka/Interperiodica Publishing.

AB The specific features of the absorption, photoluminescence, x-ray luminescence, thermally stimulated luminescence, and photostimulated luminescence spectra of CsBr : Eu²⁺ single crystals grown using the Bridgman method were studied in the temp. range 80-500 K at the highest possible dopant content (0.1-0.4 mol % EuOBr in the batch) required for prep. perfect crystals. An increase in the dopant content leads to a broadening of the absorption and

photoluminescence excitation bands with maxima at wavelengths of 250 and 350 nm due to the interconfigurational transitions 4f7(8S7/2).fwdarw.4f65d(eg,t2g) in Eu²⁺ ions. The photoluminescence and photostimulated luminescence spectra of CsBr:

EuOBr single crystals (0.1-0.4 mol % EuOBr)

contain a band at a wavelength of $\lambda_{\text{max}} = 450$ nm and bands at wavelengths of $\lambda_{\text{max}} = 508-523$ and 436 nm. The last two bands are assigned to Eu²⁺-VCs isolated dipole centers and Eu²⁺-contg. aggregate centers, resp. The intensity of the luminescence assocd. with the aggregate centers ($\lambda_{\text{max}} = 508-523$ nm) is max. at an EuOBr content of less than or equal to 0.1 mol % and decreases with an increase in the dopant content. The possibility of forming CsEuBr₃-type nanocrystals that are responsible for the green luminescence obsd. at a wavelength $\lambda_{\text{max}} = 508-523$ nm in CsBr : Eu crystals is discussed. The intensity of photostimulated luminescence in the CsBr:EuOBr crystals irradiated with x-ray photons increases as the dopant content increases. CsBr:EuOBr crystals at a dopant content in the range 0.3-0.4 mol % can be used as x-ray storage phosphors for visualizing x-ray images with high spatial resoln.

IT 13843-47-5, **Europium bromide oxide (EuBrO)**

(specific features of absorption and luminescence in CsBr :EuOBr crystals)

RN 13843-47-5 HCA

CN Europium bromide oxide (EuBrO) (9CI) (CA INDEX NAME)

Br—Eu—O

IT 7787-69-1, **Cesium bromide (CsBr)**

(specific features of absorption and luminescence in CsBr :EuOBr crystals)

RN 7787-69-1 HCA

CN Cesium bromide (CsBr) (9CI) (CA INDEX NAME)

Br—Cs

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST absorption luminescence **cesium bromide europium oxide crystal**

IT Photoexcitation

(by nitrogen laser; specific features of absorption and luminescence in CsBr:EuOBr crystals)

IT Electronic transition
(interconfigurational; specific features of absorption and luminescence in $\text{CsBr}:\text{EuOBr}$ crystals)

IT Luminescence
Optical absorption
Phosphors
Thermoluminescence
X-ray
(specific features of absorption and luminescence in $\text{CsBr}:\text{EuOBr}$ crystals)

IT 13843-47-5, Europium bromide oxide (EuBrO) 16910-54-6, Europium(2+), properties
(specific features of absorption and luminescence in $\text{CsBr}:\text{EuOBr}$ crystals)

IT 7787-69-1, Cesium bromide (CsBr)
(specific features of absorption and luminescence in $\text{CsBr}:\text{EuOBr}$ crystals)

L18 ANSWER 4 OF 21 HCA COPYRIGHT 2006 ACS on STN

141:215754 Manufacture of x-ray image conversion phosphor panel with improved sensitivity. Isoda, Tomotake (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004233134 A2 20040819, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-20145 20030129.

AB The invention relates to a vapor deposition method for forming a x-ray image conversion phosphor panel, wherein the additives to the phosphor are prep'd. from EuOX and/or EuXm ($X = \text{F}, \text{Cl}, \text{Br}, \text{I}; m = 2.0-3.0$) under $1.0 \times 10^{-8}-1.0 \times 10^{-4}$ Pa oxygen partial pressure condition.

IT 13843-47-5, Europium bromide oxide (EuOBr)
(dopant to phosphor; manuf. of x-ray image conversion phosphor panel with improved sensitivity)

RN 13843-47-5 HCA

CN Europium bromide oxide (EuBrO) (9CI) (CA INDEX NAME)

Br—Eu—O

IT 7787-69-1D, Cesium bromide, Eu-doped
(phosphor; manuf. of x-ray image conversion phosphor panel with improved sensitivity)

RN 7787-69-1 HCA

CN Cesium bromide (CsBr) (9CI) (CA INDEX NAME)

Br—Cs

IC ICM G21K004-00
 ICS C09K011-00; C09K011-08; C09K011-61; C09K011-62; C09K011-64;
 C09K011-85; C23C014-24; G01T001-00

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 Section cross-reference(s): 73

IT 13843-47-5, **Europium bromide**
 oxide (EuOBr) 122327-95-1, Europium bromide
 (EuBr)
 (dopant to phosphor; manuf. of x-ray image conversion phosphor
 panel with improved sensitivity)

IT 7787-69-1D, **Cesium bromide**, Eu-doped
 (phosphor; manuf. of x-ray image conversion phosphor panel with
 improved sensitivity)

L18 ANSWER 5 OF 21 HCA COPYRIGHT 2006 ACS on STN

14Q:171906 Methods for vapor deposition of needle-shaped x-ray phosphor
 layers on supports. Fuchs, Manfred; Hell, Erich; Roehrer, Peter
 (Siemens AG, Germany). Ger. Offen. DE 10235057 A1 20040212, 6 pp.
 (German). CODEN: GWXXBX. APPLICATION: DE 2002-10235057 20020731.

AB Methods for vapor deposition of needle-shaped alkali metal-contg.
 x-ray phosphor layers on supports (e.g., to produce storage phosphor
 plates) are described which entail simultaneous vaporization of
 europium (II) oxyhalide and alkali metal halide
 followed by deposition on the substrate. The resulting phosphors
 may be described by the general formula AB/C:EuD,E (A = Na, K, Rb
 and/or Cs; B = F, Cl, Br, and/or I; C = F, Cl, Br, I and/or O; and D
 and E = F, Cl, Br, and/or I).

IT 7787-69-1, **Cesium bromide**

7789-17-5, **Cesium iodide**

7789-39-1, **Rubidium bromide**

7791-11-9, **Rubidium chloride**, uses

(vapor deposition of needle-shaped x-ray phosphor layers on
 supports using coevaporation of europium
 oxyhalides and alkali metal halides)

RN 7787-69-1 HCA

CN Cesium bromide (CsBr) (9CI) (CA INDEX NAME)

Br—Cs

RN 7789-17-5 HCA

CN Cesium iodide (CsI) (7CI, 8CI, 9CI) (CA INDEX NAME)

Cs—I

RN 7789-39-1 HCA
 CN Rubidium bromide (RbBr) (9CI) (CA INDEX NAME)

Br—Rb

RN 7791-11-9 HCA
 CN Rubidium chloride (RbCl) (9CI) (CA INDEX NAME)

Cl—Rb

IT 118146-86-4, Cesium bromide iodide
 (Cs(Br,I)) 135155-33-8, Rubidium bromide
 chloride (RbBr0-1Cl0-1) 656824-87-2, Cesium
 rubidium bromide ((Cs,Rb)Br) 656824-88-3
 Cesium rubidium bromide iodide ((Cs,Rb)(Br,I))
 (vapor deposition of needle-shaped x-ray phosphor layers on
 supports using coevaporation of europium
 oxyhalides and alkali metal halides)

RN 118146-86-4 HCA
 CN Cesium bromide iodide (Cs(Br,I)) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
I	0 - 1	14362-44-8
Br	0 - 1	10097-32-2
Cs	1	7440-46-2

RN 135155-33-8 HCA
 CN Rubidium bromide chloride (Rb(Br,Cl)) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Cl	0 - 1	22537-15-1
Br	0 - 1	10097-32-2
Rb	1	7440-17-7

RN 656824-87-2 HCA
 CN Cesium rubidium bromide ((Cs,Rb)Br) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Br	1	10097-32-2
Cs	0 - 1	7440-46-2

Rb	0 - 1	7440-17-7
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RN 656824-88-3 HCA
 CN Cesium rubidium bromide iodide ((Cs,Rb)(Br,I)) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
I	0 - 1	14362-44-8
Br	0 - 1	10097-32-2
Cs	0 - 1	7440-46-2
Rb	0 - 1	7440-17-7

IT 12506-22-8, Europium bromide oxide (Eu₄Br₆O) 12506-73-9, Europium chloride oxide (Eu₄Cl₆O) 12514-47-5, Europium bromide oxide (Eu₃Br₄O) 656824-80-5, Europium fluoride oxide (Eu₃F₄O) 656824-81-6, Europium iodide oxide (Eu₄I₆O) 656824-82-7, Europium fluoride oxide (Eu₄F₆O) 656824-83-8, Europium chloride oxide (Eu₃Cl₄O) 656824-84-9, Europium iodide oxide (Eu₃I₄O) (vapor deposition of needle-shaped x-ray phosphor layers on supports using coevaporation of europium oxyhalides and alkali metal halides)

RN 12506-22-8 HCA
 CN Europium bromide oxide (Eu₄Br₆O) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
Br	6	10097-32-2
Eu	4	7440-53-1

RN 12506-73-9 HCA
 CN Europium chloride oxide (Eu₄Cl₆O) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Cl	6	22537-15-1
O	1	17778-80-2
Eu	4	7440-53-1

RN 12514-47-5 HCA

CN Europium bromide oxide (Eu₃Br₄O) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
Br	4	10097-32-2
Eu	3	7440-53-1

RN 656824-80-5 HCA

CN Europium fluoride oxide (Eu₃F₄O) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
F	4	14762-94-8
Eu	3	7440-53-1

RN 656824-81-6 HCA

CN Europium iodide oxide (Eu₄I₆O) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
I	6	14362-44-8
Eu	4	7440-53-1

RN 656824-82-7 HCA

CN Europium fluoride oxide (Eu₄F₆O) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
F	6	14762-94-8
Eu	4	7440-53-1

RN 656824-83-8 HCA

CN Europium chloride oxide (Eu₃Cl₄O) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Cl	4	22537-15-1
O	1	17778-80-2

Eu	3	7440-53-1
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RN 656824-84-9 HCA
 CN Europium iodide oxide (Eu₃I₄O) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
I	4	14362-44-8
Eu	3	7440-53-1

IC ICM C09K011-61
 ICS C09K011-55; H01J009-22; C23C016-448
 CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 75
 ST europium alkali metal halide x ray phosphor vapor deposition; storage phosphor vapor deposition; **europium oxyhalide** alkali metal halide coevapn phosphor deposition
 IT X-ray devices
 (luminescent screens; vapor deposition of needle-shaped x-ray phosphor layers on supports using coevaporation of **europium oxyhalides** and alkali metal halides for)
 IT Halides
 (**oxyhalides**, **europium**; vapor deposition of needle-shaped x-ray phosphor layers on supports using coevaporation of **europium oxyhalides** and alkali metal halides)
 IT Phosphors
 (radioluminescent phosphors, for x-rays; vapor deposition of needle-shaped x-ray phosphor layers on supports using coevaporation of **europium oxyhalides** and alkali metal halides)
 IT Vapor deposition process
 (vapor deposition of needle-shaped x-ray phosphor layers on supports using coevaporation of **europium oxyhalides** and alkali metal halides)
 IT Alkali metal halides, uses
 (vapor deposition of needle-shaped x-ray phosphor layers on supports using coevaporation of **europium oxyhalides** and alkali metal halides)
 IT Luminescent screens
 (x-ray; vapor deposition of needle-shaped x-ray phosphor layers on supports using coevaporation of **europium oxyhalides** and alkali metal halides for)
 IT 13769-20-5, Europium dichloride 13780-48-8, Europium dibromide

656824-85-0, Europium bromide fluoride (Eu(Br,F)) 656824-86-1,
Europium fluoride iodide (Eu(F,I))

(alkali halide phosphors activated with;
vapor deposition of needle-shaped x-ray phosphor layers on
supports using coevaporation of europium
oxyhalides and alkali metal halides)

IT 7440-53-1, Europium, uses 16910-54-6, Europium +2, uses
(alkali halide phosphors activated with;
vapor deposition of needle-shaped x-ray phosphor layers on
supports using coevaporation of europium
oxyhalides and alkali metal halides)

IT 7787-69-1, Cesium bromide
7789-17-5, Cesium iodide
7789-39-1, Rubidium bromide
7791-11-9, Rubidium chloride, uses
(vapor deposition of needle-shaped x-ray phosphor layers on
supports using coevaporation of europium
oxyhalides and alkali metal halides)

IT 118146-86-4, Cesium bromide iodide
(Cs(Br,I)) 135155-33-8, Rubidium bromide
chloride (RbBr0-1Cl0-1) 656824-87-2, Cesium
rubidium bromide ((Cs,Rb)Br) 656824-88-3
, Cesium rubidium bromide iodide ((Cs,Rb)(Br,I))
(vapor deposition of needle-shaped x-ray phosphor layers on
supports using coevaporation of europium
oxyhalides and alkali metal halides)

IT 12506-22-8, Europium bromide
oxide (Eu₄Br₆O) 12506-73-9, Europium
chloride oxide (Eu₄Cl₆O) 12514-47-5,
Europium bromide oxide (Eu₃Br₄O)
656824-80-5, Europium fluoride
oxide (Eu₃F₄O) 656824-81-6, Europium
iodide oxide (Eu₄I₆O) 656824-82-7,
Europium fluoride oxide (Eu₄F₆O)
656824-83-8, Europium chloride
oxide (Eu₃Cl₄O) 656824-84-9, Europium
iodide oxide (Eu₃I₄O)
(vapor deposition of needle-shaped x-ray phosphor layers on
supports using coevaporation of europium
oxyhalides and alkali metal halides)

L18 ANSWER 6 OF 21 HCA COPYRIGHT 2006 ACS on STN

140:171905 Methods for vapor deposition of needle-shaped x-ray phosphor
layers on supports. Fuchs, Manfred; Hell, Erich; Roehrer, Peter
(Siemens AG, Germany). Ger. Offen. DE 10235051 A1 20040212, 5 pp.
(German). CODEN: GWXXBX. APPLICATION: DE 2002-10235051 20020731.

AB Methods for vapor deposition of needle-shaped alkali metal-contg.
x-ray phosphor layers on supports (e.g., to produce storage phosphor

plates) are described which entail simultaneous vaporization of europium (II) oxyhalide and alkali metal halide followed by deposition on the substrate. Preferably, a molybdenum evaporator is used to evap. the europium (II) oxyhalide(s). The resulting phosphors may be described by the general formula AB/C:EuD,E (A = Na, K, Rb and/or Cs; B = F, Cl, Br, and/or I; C = F, Cl, Br, I and/or O; and D and E = F, Cl, Br, and/or I).

IT 7787-69-1, Cesium bromide
 7789-39-1, Rubidium bromide
 7791-11-9, Rubidium chloride, uses
 656825-01-3, Rubidium chloride iodide
 (Rb(Cl,I))
 (vapor deposition of needle-shaped x-ray phosphor layers on supports using coevaporation of europium oxyhalides and alkali metal halides)

RN 7787-69-1 HCA
 CN Cesium bromide (CsBr) (9CI) (CA INDEX NAME)

Br—Cs

RN 7789-39-1 HCA
 CN Rubidium bromide (RbBr) (9CI) (CA INDEX NAME)

Br—Rb

RN 7791-11-9 HCA
 CN Rubidium chloride (RbCl) (9CI) (CA INDEX NAME)

Cl—Rb

RN 656825-01-3 HCA
 CN Rubidium chloride iodide (Rb(Cl,I)) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Cl	0 - 1	22537-15-1
I	0 - 1	14362-44-8
Rb	1	7440-17-7

IT 111387-97-4, Cesium bromide chloride
 (Cs(Br,Cl)) 111592-14-4, Rubidium bromide iodide (Rb(Br,I)) 135155-33-8,
 Rubidium bromide chloride (RbBr0-1Cl0-1)
 656824-87-2, Cesium rubidium bromide

((Cs,Rb)Br)

(vapor deposition of needle-shaped x-ray phosphor layers on supports using coevaporation of europium oxyhalides and alkali metal halides)

RN 111387-97-4 HCA

CN Cesium bromide chloride (Cs(Br,Cl)) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Cl	0 - 1	22537-15-1
Br	0 - 1	10097-32-2
Cs	1	7440-46-2

RN 111592-14-4 HCA

CN Rubidium bromide iodide (Rb(Br,I)) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
I	0 - 1	14362-44-8
Br	0 - 1	10097-32-2
Rb	1	7440-17-7

RN 135155-33-8 HCA

CN Rubidium bromide chloride (Rb(Br,Cl)) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Cl	0 - 1	22537-15-1
Br	0 - 1	10097-32-2
Rb	1	7440-17-7

RN 656824-87-2 HCA

CN Cesium rubidium bromide ((Cs,Rb)Br) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Br	1	10097-32-2
Cs	0 - 1	7440-46-2
Rb	0 - 1	7440-17-7

IT 12514-47-5, Europium bromide
oxide (Eu₃Br₄O) 656824-80-5, Europium
fluoride oxide (Eu₃F₄O) 656824-83-8,
Europium chloride oxide (Eu₃Cl₄O)

656824-84-9, Europium iodide
oxide (Eu₃I₄O)

(vapor deposition of needle-shaped x-ray phosphor layers on
supports using coevaporation of **europium**
oxyhalides and alkali metal halides)

RN 12514-47-5 HCA

CN Europium bromide oxide (Eu₃Br₄O) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
Br	4	10097-32-2
Eu	3	7440-53-1

RN 656824-80-5 HCA

CN Europium fluoride oxide (Eu₃F₄O) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
F	4	14762-94-8
Eu	3	7440-53-1

RN 656824-83-8 HCA

CN Europium chloride oxide (Eu₃Cl₄O) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Cl	4	22537-15-1
O	1	17778-80-2
Eu	3	7440-53-1

RN 656824-84-9 HCA

CN Europium iodide oxide (Eu₃I₄O) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
I	4	14362-44-8
Eu	3	7440-53-1

IC ICM G21K004-00

ICS G01T001-202; G01T001-29; C09K011-85

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related

Properties)

Section cross-reference(s) : 75

ST europium alkali metal halide x ray phosphor vapor deposition;
storage phosphor vapor deposition; **europium**
oxyhalide alkali metal halide coevapn phosphor deposition

IT X-ray devices

(luminescent screens; vapor deposition of needle-shaped x-ray
phosphor layers on supports using coevaporation of
europium oxyhalides and alkali metal halides
for)

IT Halides

(**oxyhalides**, **europium**; vapor deposition of
needle-shaped x-ray phosphor layers on supports using
coevaporation of **europium oxyhalides** and
alkali metal halides)

IT Phosphors

(radioluminescent phosphors, for x-rays; vapor deposition of
needle-shaped x-ray phosphor layers on supports using
coevaporation of **europium oxyhalides** and
alkali metal halides)

IT Vapor deposition process

(vapor deposition of needle-shaped x-ray phosphor layers on
supports using coevaporation of **europium**
oxyhalides and alkali metal halides)

IT Alkali metal halides, uses

(vapor deposition of needle-shaped x-ray phosphor layers on
supports using coevaporation of **europium**
oxyhalides and alkali metal halides)

IT Evaporators

(vapor deposition of needle-shaped x-ray phosphor layers on
supports using coevaporation of **europium**
oxyhalides and alkali metal halides using molybdenum)

IT Luminescent screens

(x-ray; vapor deposition of needle-shaped x-ray phosphor layers
on supports using coevaporation of **europium**
oxyhalides and alkali metal halides for)

IT 13769-20-5, Europium dichloride 13780-48-8, Europium dibromide
656824-85-0, Europium bromide fluoride (Eu(Br,F)) 656824-86-1,
Europium fluoride iodide (Eu(F,I))

(**alkali halide** phosphors activated with;
vapor deposition of needle-shaped x-ray phosphor layers on
supports using coevaporation of **europium**
oxyhalides and alkali metal halides)

IT 7440-53-1, Europium, uses 16910-54-6, Europium +2, uses

(**alkali halide** phosphors activated with;
vapor deposition of needle-shaped x-ray phosphor layers on
supports using coevaporation of **europium**
oxyhalides and alkali metal halides)

IT 656824-99-6, Europium bromide iodide (Eu(Br,I)) 656825-00-2,
 Europium chloride fluoride (Eu(Cl,F))
 (vapor deposition of needle-shaped x-ray phosphor layers on
 supports using coevaporation of **europium**
oxyhalides and alkali metal halides)

IT 7787-69-1, Cesium bromide
 7789-39-1, Rubidium bromide
 7791-11-9, Rubidium chloride, uses
 656825-01-3, Rubidium chloride iodide
 (Rb(Cl,I))
 (vapor deposition of needle-shaped x-ray phosphor layers on
 supports using coevaporation of **europium**
oxyhalides and alkali metal halides)

IT 111387-97-4, Cesium bromide chloride
 (Cs(Br,Cl)) 111592-14-4, Rubidium
 bromide iodide (Rb(Br,I)) 135155-33-8,
 Rubidium bromide chloride (RbBr0-1Cl0-1)
 656824-87-2, Cesium rubidium bromide
 ((Cs,Rb)Br)
 (vapor deposition of needle-shaped x-ray phosphor layers on
 supports using coevaporation of **europium**
oxyhalides and alkali metal halides)

IT 12514-47-5, Europium bromide
 oxide (Eu₃Br₄O) 656824-80-5, Europium
 fluoride oxide (Eu₃F₄O) 656824-83-8,
 Europium chloride oxide (Eu₃Cl₄O)
 656824-84-9, Europium iodide
 oxide (Eu₃I₄O)
 (vapor deposition of needle-shaped x-ray phosphor layers on
 supports using coevaporation of **europium**
oxyhalides and alkali metal halides)

IT 7439-98-7, Molybdenum, uses
 (vapor deposition of needle-shaped x-ray phosphor layers on
 supports using coevaporation of **europium**
oxyhalides and alkali metal halides using evaporators
 formed from)

L18 ANSWER 7 OF 21 HCA COPYRIGHT 2006 ACS on STN

140:84345 Binderless storage phosphor screen. Leblans, Paul; Toshio,
 Takabayashi (Agfa-Gevaert, Belg.). Eur. Pat. Appl. EP 1376615 A2
 20040102, 14 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR,
 GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY,
 AL, TR, BG, CZ, EE, HU, SK. (English). CODEN: EPXXDW.
 APPLICATION: EP 2003-101860 20030625. PRIORITY: EP 2002-100763
 20020628.

AB An image storage screen or panel, suitable for use in applications
 related with computed radiog. is described wherein the screen or
 panel comprises a binderless needle-shaped stimulable (storage)

phosphor (e.g., CsX:Eu X = Cl, Br) and a substrate (e.g., amorphous-C), wherein the substrate has a surface roughness $<2 \mu\text{m}$ and a reflectivity $>80\%$, wherein the substrate may be overcoated with Al reflecting layer. The image storage screen or panel may be used for mammog. applications or computed radiog.

IT 13843-47-5, **Europium bromide oxide (EuBrO)**
 (binderless storage phosphor screen using amorphous carbon substrate)

RN 13843-47-5 HCA

CN Europium bromide oxide (EuBrO) (9CI) (CA INDEX NAME),

Br—Eu=O

IT 7647-17-8, **Cesium chloride (CsCl)**
), uses 7787-69-1, **Cesium bromide (CsBr)**
 (phosphor; binderless storage phosphor screen using amorphous carbon substrate)

RN 7647-17-8 HCA

CN Cesium chloride (CsCl) (7CI, 8CI, 9CI) (CA INDEX NAME)

Cl—Cs

RN 7787-69-1 HCA
 CN Cesium bromide (CsBr) (9CI) (CA INDEX NAME)

Br—Cs

IC ICM G21K004-00
 CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 8, 74
 IT 13843-47-5, **Europium bromide oxide (EuBrO)**
 (binderless storage phosphor screen using amorphous carbon substrate)
 IT 7647-17-8, **Cesium chloride (CsCl)**
), uses 7787-69-1, **Cesium bromide (CsBr)**
 (phosphor; binderless storage phosphor screen using amorphous carbon substrate)

Manfred; Hell, Erich; Knuepfer, Wolfgang; Mattern, Detlef; Schulz, Reiner (Siemens AG, Germany). Ger. Offen. DE 10148161 A1 20030424, 6 pp. (German). CODEN: GWXXBX. APPLICATION: DE 2001-10148161 20010928.

AB Phosphors for radiog. image intensifiers are described by the general formula $Me_1X:Me_2$ (Me_1 = an alkali metal cation; X = a halogen anion; and Me_2 is a nonmonovalent metal cation dopant). An addnl. dopant may also be present. The use of the phosphors in radiog. image intensifiers and radiog. image intensifiers employing the phosphors are also described.

IT 7787-69-1, Cesium bromide
 7789-17-5, Cesium iodide
 (alkali metal halide phosphors for radiog. image intensifiers and the image intensifiers)

RN 7787-69-1 HCA

CN Cesium bromide (CsBr) (9CI) (CA INDEX NAME)

Br—Cs

RN 7789-17-5 HCA

CN Cesium iodide (CsI) (7CI, 8CI, 9CI) (CA INDEX NAME)

Cs—I

IT 13843-47-5, Europium bromide
 oxide (EuBrO)
 (cesium bromide contg.; alkali metal halide
 phosphors for radiog. image intensifiers and the image
 intensifiers)

RN 13843-47-5 HCA

CN Europium bromide oxide (EuBrO) (9CI) (CA INDEX NAME)

Br—Eu—O

IC ICM C09K011-61
 ICS G21K004-00

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 8, 74

IT 7787-69-1, Cesium bromide
 7789-17-5, Cesium iodide
 (alkali metal halide phosphors for radiog. image intensifiers and the image intensifiers)

IT 13759-88-1, Europium tribromide 13843-47-5,
 Europium bromide oxide (EuBrO)

14457-87-5, Cerium bromide

(cesium bromide contg.; alkali metal halide
phosphors for radiog. image intensifiers and the image
intensifiers)

L18 ANSWER 9 OF 21 HCA COPYRIGHT 2006 ACS on STN

137:53654 A cesium halide storage phosphor with

narrow emission spectrum upon UV-excitation. Leblans, Paul; Struye, Luc (Agfa-Gevaert, Belg.). Eur. Pat. Appl. EP 1217633 A1 20020626, 8 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR. (English). CODEN: EPXXDW. APPLICATION: EP 2001-655 20011123.

PRIORITY: EP 2000-204700 20001222.

AB This Cs halide:Eu phosphor has a narrow emission spectrum for UV-excitation and panels including such a phosphor, are described. Methods to prep. this phosphor are also presented.

IT 7787-69-1, Cesium bromide (CsBr

)
(activated with Eu; cesium halide storage phosphor with narrow emission spectrum upon UV-excitation)

RN 7787-69-1 HCA

CN Cesium bromide (CsBr) (9CI) (CA INDEX NAME)

Br—Cs

IT 7647-17-8, Cesium chloride (CsCl
, uses

(activated with Eu; cesium halide storage phosphor with narrow emission spectrum upon UV-excitation)

RN 7647-17-8 HCA

CN Cesium chloride (CsCl) (7CI, 8CI, 9CI) (CA INDEX NAME)

Cl—Cs

IT 13843-47-5, Europium bromide
oxide (EuBrO)

(cesium halide storage phosphor with narrow
emission spectrum upon UV-excitation)

RN 13843-47-5 HCA

CN Europium bromide oxide (EuBrO) (9CI) (CA INDEX NAME)

Br—Eu—O

IT 13759-95-0, Europium chloride
oxide (EuClO) 22015-36-7,

Europium fluoride oxide (EuFO)
22015-37-8, Europium iodide
oxide (EuIO)
(cesium halide storage phosphor with narrow
emission spectrum upon UV-excitation)

RN 13759-95-0 HCA
CN Europium chloride oxide (EuClO) (9CI) (CA INDEX NAME)

Cl—Eu—O

RN 22015-36-7 HCA
CN Europium fluoride oxide (EuFO) (9CI) (CA INDEX NAME)

F—Eu—O

RN 22015-37-8 HCA
CN Europium iodide oxide (EuOI) (7CI, 8CI, 9CI) (CA INDEX NAME)

I—Eu—O

IC ICM G21K004-00
ICS C09K011-85
CC 71-7 (Nuclear Technology)
Section cross-reference(s): 8
ST radiog luminescent screen **cesium bromide**
europium storage phosphor
IT Annealing
Luminescence
Radiographic luminescent screens
Vapor deposition process
(cesium halide storage phosphor with narrow
emission spectrum upon UV-excitation)
IT Rare earth halides
(europium; cesium halide storage phosphor
with narrow emission spectrum upon UV-excitation)
IT 7440-53-1, Europium, uses
(CsBr and CsCl activated with; cesium
halide storage phosphor with narrow emission spectrum
upon UV-excitation)
IT 7787-69-1, Cesium bromide (CsBr
)
(activated with Eu; cesium halide storage
phosphor with narrow emission spectrum upon UV-excitation)
IT 7647-17-8, Cesium chloride (CsCl
, uses

(activated with Eu; **cesium halide storage phosphor with narrow emission spectrum upon UV-excitation**)

IT 1333-74-0, Hydrogen, processes 7440-37-1, Argon, processes
 (cesium halide storage phosphor with narrow emission spectrum upon UV-excitation)

IT 13780-48-8, Europium bromide (EuBr₂) 13843-47-5,
Europium bromide oxide (EuBrO)
 (cesium halide storage phosphor with narrow emission spectrum upon UV-excitation)

IT 10025-76-0, Europium chloride (EuCl₃) 13759-88-1, Europium bromide (EuBr₃) 13759-90-5, Europium iodide (EuI₃) 13759-95-0,
Europium chloride oxide (EuClO)
) 13765-25-8, Europium fluoride (EuF₃) 13769-20-5, Europium chloride (EuCl₂) 14077-39-5, Europium fluoride (EuF₂) 22015-35-6, Europium iodide (EuI₂) 22015-36-7,
Europium fluoride oxide (EuFO)
 22015-37-8, **Europium iodide oxide (EuIO)**
 (cesium halide storage phosphor with narrow emission spectrum upon UV-excitation)

L18 ANSWER 10 OF 21 HCA COPYRIGHT 2006 ACS on STN

136:141839 On the local structure of Eu³⁺ ions in oxyfluoride glasses. Comparison with fluoride and oxide glasses. Lavin, V.; Babu, P.; Jayasankar, C. K.; Martin, I. R.; Rodriguez, V. D. (Departamento de Fisica Fundamental y Experimental, Universidad de La Laguna, Tenerife, La Laguna, E-38200, Spain). Journal of Chemical Physics, 115(23), 10935-10944 (English) 2001. CODEN: JCPSA6. ISSN: 0021-9606. Publisher: American Institute of Physics.

AB Broadband and fluorescence line narrowing optical spectroscopic studies were used to study the local environments of Eu³⁺ ions in Li fluoroborate glasses. From the vibronic spectra, different borate groups coupled with the Eu³⁺ ions were identified. A pulsed tunable dye laser was used to selectively excite the 5D0 level of the Eu³⁺ ion and the subsequent 5D0 7F1 fluorescence spectra were monitored as a function of the exciting wavelength. From these FLN studies, three 7F1 Stark levels were identified and a C2v orthorhombic symmetry was assumed in the subsequent calcn. of the crystal-field parameters for the different environments occupied by the Eu³⁺ ions in the glass. The 2nd rank crystal-field parameters were systematically analyzed for the Eu^{3+:}Li fluoroborate glass from the site dependent behavior of the 7F1 level splitting. The importance of the J-mixing in the crystal-field anal. was emphasized. An appropriate method for comparing the crystal-field interactions in different glasses is proposed by analyzing the 7F1 level. Thus, results obtained for the Eu^{3+:}fluoroborate were compared with recalcd. results in other Eu³⁺ doped fluoride, borate, silicate, and borosilicate glasses. An intermediate behavior between Eu^{3+:}oxide

and Eu³⁺:fluoride glasses is obsd. for the local structure of the Eu³⁺ ions in the fluoroborate glass, indicating the active participation of F ions in the immediate environments of the lanthanide ion in this glass.

IT 7789-24-4, **Lithium fluoride**, occurrence
(glass contg.; local structure of Eu³⁺ ions in oxyfluoride or fluoride or oxide glasses)
RN 7789-24-4 HCA
CN Lithium fluoride (LiF) (9CI) (CA INDEX NAME)

F—Li

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 57, 65
ST local structure **europlum oxyfluoride** fluoride
oxide glass
IT 1308-96-9, **Europium sesquioxide** 7789-24-4, **Lithium fluoride**, occurrence 10043-35-3, **Boric acid**, occurrence
(glass contg.; local structure of Eu³⁺ ions in oxyfluoride or fluoride or oxide glasses)

L18 ANSWER 11 OF 21 HCA COPYRIGHT 2006 ACS on STN
135:378856 A binderless storage phosphor screen with needle shaped crystals. (Agfa-Gevaert N.V., Belg.). Eur. Pat. Appl. EP 1158540 A1 20011128, 15 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2000-201857 20000524.
AB A binderless storage phosphor screen with needle shaped crystals, wherein the phosphor is an **alkali halide** phosphor and the needles show high [100] unit cell orientation in the plane of the screen.
IT 7787-69-1P, **Cesium bromide**
(Eu doped; binderless storage phosphor screen with needle shaped crystals)
RN 7787-69-1 HCA
CN Cesium bromide (CsBr) (9CI) (CA INDEX NAME)

Br—Cs

IT 13843-47-5, **Europium bromide**
oxide EuBrO
(binderless storage phosphor screen with needle shaped crystals of **CsBr** doped with Eu formed by vapor deposition of **CsBr** and)
RN 13843-47-5 HCA

CN Europium bromide oxide (EuBrO) (9CI) (CA INDEX NAME)

Br—Eu—O

IC ICM G21K004-00
ICS C09K011-85

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST binderless storage phosphor screen needle shaped alkali halides crystals

IT Vapor deposition process
(binderless storage phosphor screen with needle shaped crystals of CsBr doped with Eu formed by)

IT X-ray diffraction
(by CsBr doped with Eu crystals formed by vapor deposition of CsBr and EuOBr)

IT 7787-69-1P, Cesium bromide
(Eu doped; binderless storage phosphor screen with needle shaped crystals)

IT 7440-53-1, Europium, processes
(binderless storage phosphor screen with needle shaped crystals of CsBr doped with)

IT 13759-88-1, Europium tribromide 13780-48-8, Europium dibromide

13843-47-5, Europium bromide

oxide EuBrO

(binderless storage phosphor screen with needle shaped crystals of CsBr doped with Eu formed by vapor deposition of CsBr and)

IT 7440-37-1, Argon, processes
(binderless storage phosphor screen with needle shaped crystals of CsBr doped with Eu formed by vapor deposition of CsBr and EuOBr in atm. of)

L18 ANSWER 12 OF 21 HCA COPYRIGHT 2006 ACS on STN

135:53365 A binderless storage phosphor screen with needle shaped crystals. Hell, Erich; Fuchs, Manfred; Mattern, Detlef; Schmitt, Berhard; Leblans, Paul (Agfa-Gevaert, Belg.). Eur. Pat. Appl. EP 1113458 A1 20010704, 16 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2000-204217 20001128. PRIORITY: DE 1999-19963182 19991227; EP 2000-201857 20000524.

AB A binderless storage phosphor screen with needle shaped crystals, wherein the phosphor is an alkali-halide phosphor and the needles show high [100] unit cell orientation in the plane of the screen.

IT 7647-17-8, Cesium chloride, uses

7787-69-1, Cesium bromide

(Eu doped; binderless storage phosphor screen with needle shaped crystals of)

RN 7647-17-8 HCA

CN Cesium chloride (CsCl) (7CI, 8CI, 9CI) (CA INDEX NAME)

Cl—Cs

RN 7787-69-1 HCA

CN Cesium bromide (CsBr) (9CI) (CA INDEX NAME)

Br—Cs

IT 13843-47-5, **Europium bromide oxide EuBrO**

(vapor deposition of CsBr or CsCl and EuOBr in process of fabrication of binderless storage phosphor screen with needle shaped crystals)

RN 13843-47-5 HCA

CN Europium bromide oxide (EuBrO) (9CI) (CA INDEX NAME)

Br—Eu—O

IC ICM G21K004-00

ICS C09K011-85

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 71, 75

ST binderless storage phosphor screen needle shaped crystals
cesium halide

IT Vapor deposition process

(of CsBr or CsCl and EuOBr in process of fabrication of binderless storage phosphor screen with needle shaped crystals)

IT 7647-17-8, **Cesium chloride, uses**

7787-69-1, Cesium bromide

(Eu doped; binderless storage phosphor screen with needle shaped crystals of)

IT 13843-47-5, **Europium bromide oxide EuBrO**

(vapor deposition of CsBr or CsCl and EuOBr in process of fabrication of binderless storage phosphor screen with needle shaped crystals)

134:63877 Radiation image read out apparatus. Struye, Luc; Leblans, Paul (Agfa-Gevaert Naamloze Venootschap, Belg.). Eur. Pat. Appl. EP 1065525 A2 20010103, 15 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2000-202111 20000613. PRIORITY: US 1999-PV142276 19990702; US 1999-PV159004 19991008.

AB A system for reading a radiation image that has been stored in a photostimulable phosphor screen comprising a divalent europium activated **cesium halide** phosphor wherein said halide is at least one of chloride and bromide. Light emitted by the phosphor screen upon stimulation is sep'd. from stimulation light by means of a filter comprising a dye.

IT 7787-69-1, **Cesium bromide**
(Eu²⁺ activated; app. for radiation image read out comprising photostimulable phosphor screen)

RN 7787-69-1 HCA

CN Cesium bromide (CsBr) (9CI) (CA INDEX NAME)

Br—Cs

IT 7647-17-8, **Cesium chloride**, properties
(Eu²⁺ activated; app. for radiation image read out comprising photostimulable phosphor screen contg.)

RN 7647-17-8 HCA

CN Cesium chloride (CsCl) (7CI, 8CI, 9CI) (CA INDEX NAME)

Cl—Cs

IT 13759-95-0, **Europium chloride**
oxide EuClO 13843-47-5, **Europium**
bromide oxide EuBrO
(app. for radiation image read out comprising photostimulable phosphor screen contg. **cesium halide** and)

RN 13759-95-0 HCA

CN Europium chloride oxide (EuClO) (9CI) (CA INDEX NAME)

Cl—Eu==O

RN 13843-47-5 HCA

CN Europium bromide oxide (EuBrO) (9CI) (CA INDEX NAME)

Br—Eu==O

IC ICM G01T001-29
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 71, 73
 ST radiation image read out app europium doped **cesium halide**; app radiation imaging phosphore dye optical filter
 IT 7787-69-1, **Cesium bromide**
 (Eu²⁺ activated; app. for radiation image read out comprising photostimulable phosphor screen)
 IT 7647-17-8, **Cesium chloride**, properties
 (Eu²⁺ activated; app. for radiation image read out comprising photostimulable phosphor screen contg.)
 IT 7440-53-1D, Europium, dihalide, trihalide and halide oxide, uses 10025-76-0, Europium trichloride 13759-88-1, Europium tribromide 13759-95-0, **Europium chloride**
 oxide EuClO 13769-20-5, Europium dichloride 13780-48-8, Europium dibromide 13843-47-5,
 Europium bromide oxide EuBrO
 (app. for radiation image read out comprising photostimulable phosphor screen contg. **cesium halide** and)
 IT 16910-54-6, Europium 2+, uses
 (app. for radiation image read out with photostimulable phosphor screen comprising **cesium halide** activated with)

L18 ANSWER 14 OF 21 HCA COPYRIGHT 2006 ACS on STN

119:18564 Reexamination of fluorine-19 NMR in selected solids, the conductor silver fluoride (Ag₂F) and reference insulators for studies of YBa₂Cu₃O₇-type superconductors. Pan, H.; Gerstein, B. C.; Loeliger, H. R.; Vanderah, T. A. (Nav. Weapons Cent., China Lake, CA, USA). Report, Order No. AD-A243194, 30 pp. Avail. NTIS From: Gov. Rep. Announce. Index (U. S.) 1992, 92(6), Abstr. No. 215,402 (English) 1991.

AB Evidence of incorporated F in the so-called 1-2-3-type, YBa₂Cu₃O₇ derived compds. has been cited. The aim was to confirm an increase in T_c as Ovshinsky claimed in 1987 by substitution of F for O. One expects for the 1-2-3-type compds., since they display metallic cond. at room temp., a downfield-shifted F NMR resonance. As a guideline for judging the line positions and shapes of fluorine incorporated in the 1-2-3-type compds., the ¹⁹F NMR signals were reexamd. in a metallic inorg. conductor (Ag₂F), in the insulating starting materials used to synthesize the superconductor phases (YOF, EuOF, and YF₃) and in BaF₂ and CuF₂ which could be formed during the synthesis. AgF and KF were used as ref. samples. There appear to be only two inorg. compds. contg. fluorine and showing high metallic cond.: (1) Ag₂F, with NMR results reported by Nishihara et al., and (2) (Ag₇O₈) + (HF₂) - reported by Hindermann.

CC 76-4 (Electric Phenomena)

Section cross-reference(s): 77

L18 ANSWER 15 OF 21 HCA COPYRIGHT 2006 ACS on STN
 118:155495 Determination of solubility products and potential -pO₂-
 diagrams for yttria and europia in molten potassium chloride-lithium chloride eutectic.

Suh, Gill Won; Paik, Young Hyun (Dep. Met. Eng., Korea Univ., Seoul, 136-701, S. Korea). Taehan Kumsok Hakhoechi, 30(8), 981-8 (Korean) 1992. CODEN: TKHCDJ. ISSN: 0253-3847.

AB Soly. products of Y₂O₃ and Eu₂O₃ were measured by the potentiometric titrn. method in molten KCl-LiCl eutectic at 743K. Measured titrn. curves clearly showed the formation of new types of sol. intermediate oxychloride complex ions, Y₄O₅Cl_{x+1}-(x-1) and Eu₂O_{Clx+3}-(x-1), before in situ pptn. of those rare earth oxides. Oxides thus formed seemed to be far more reactive than those in their std. state, thereby explaining the discrepancies between measured and calcd. soly. products. The equil. formation consts. for the intermediate oxychloride complex ions, Y₄O₄Cl_{x-1}-(x-1) and Eu₂O_{Clx+3}-(x-1) were 10-35.01 and 10-3.88, resp. The soly. products for Y₂O₃ and Eu₂O₃ were also detd., being 10-19.73 and 10-6.63, resp. From these results the potential-pO₂-diagrams for Y and Eu were constructed.

IT 7447-40-7D, Potassium chloride, eutectic with lithium chloride 7447-41-8D,
 Lithium chloride, eutectic with potassium chloride

(soly. product of europia and of yttria in molten)

RN 7447-40-7 HCA

CN Potassium chloride (KCl) (9CI) (CA INDEX NAME)

Cl-K

RN 7447-41-8 HCA

CN Lithium chloride (LiCl) (9CI) (CA INDEX NAME)

Cl-Li

CC 68-1 (Phase Equilibria, Chemical Equilibria, and Solutions)

ST europia soly product alkali chloride eutectic;
 yttria soly product alkali chloride eutectic;
 oxychloride europium yttrium formation const

IT Solubility product
 (of europia and of yttria in lithium chloride
 -potassium chloride eutectic melt)

IT 7440-53-1D, Europium, oxychlorides 7440-65-5D,
 Yttrium, oxychlorides

(formation consts. of)

IT 7447-40-7D, Potassium chloride, eutectic with lithium chloride 7447-41-8D, Lithium chloride, eutectic with potassium chloride

(solv. product of europia and of yttria in molten)

IT 1308-96-9, Europia 1314-36-9, Yttria, properties (solv. product of, in lithium chloride-potassium chloride eutectic melts)

L18 ANSWER 16 OF 21 HCA COPYRIGHT 2006 ACS on STN

115:148714 A reexamination of fluorine-19 NMR in selected solids, the conductor silver fluoride (Ag₂F) and reference insulators for studies of yttrium barium copper oxide (YBa₂Cu₃O₇)-type superconductors. Pan, H.; Gerstein, B. C.; Loeliger, H. R.; Vanderah, T. A. (Ames Lab., Iowa State Univ., Ames, IA, 50011, USA). Applied Magnetic Resonance, 1(1), 101-12 (English), 1990. CODEN: APMREI. ISSN: 0937-9347.

AB NMR signals of ¹⁹F were measured in the polycryst. inorg. conductor Ag₂F and in the polycryst. insulators AgF, YOF, EuOF, YF₃, CuF₂, BaF₂ and KF to compare them to the signals found in the so-called .mchlt.1-2-3-type.mchgt. compds. with claimed formulas RBa₂Cu₃O₇-xFx (R = Y and Eu). No evidence for a Knight-shifted, built-in F signal is found in the 1-2-3-type superconductors, whereas Ag₂F shows a clearly downfield shifted ¹⁹F peak with ref. to AgF.

IT 7789-23-3, Potassium fluoride
22015-36-7, Europium fluoride oxide (EuFO)
(NMR of, fluorine-19)

RN 7789-23-3 HCA

CN Potassium fluoride (KF) (9CI) (CA INDEX NAME)

F—K

RN 22015-36-7 HCA
CN Europium fluoride oxide (EuFO) (9CI) (CA INDEX NAME)

F—Eu—O

CC 77-7 (Magnetic Phenomena)
Section cross-reference(s): 76
IT Superconductors

(barium copper yttrium fluoride oxide and barium copper europium fluoride oxide, fluorine-19
NMR of)

IT Nuclear magnetic resonance
 (of fluorides and barium copper yttrium oxide fluoride and barium copper europium oxide fluoride,
 fluorine-19)

IT 1302-01-8, Silver fluoride (Ag₂F) 7775-41-9, Silver fluoride (AgF)
 7787-32-8, Barium difluoride 7789-19-7, Copper difluoride
7789-23-3, Potassium fluoride
 13709-49-4, Yttrium trifluoride 14794-98-0, Yttrium fluoride oxide
 (YFO) 22015-36-7, **Europium fluoride**
oxide (EuFO) 121764-59-8, Barium copper yttrium
 fluoride oxide (Ba₂Cu₃YF₆.206.8) 136200-29-8, Barium copper
europium fluoride oxide
 (Ba₂Cu₃EuF₆.206.8)
 (NMR of, fluorine-19)

IT 7782-41-4
 (nuclear magnetic resonance, of fluorides and barium copper
 yttrium oxide fluoride and barium copper europium
 oxide fluoride, fluorine-19)

L18 ANSWER 17 OF 21 HCA COPYRIGHT 2006 ACS on STN
 106:60370 Action of alkali metals on lanthanide(III) halides: new
 possibilities. Meyer, Gerd; Schleid, Thomas (Inst. Anorg. Anal.
 Chem., Justus-Liebig-Univ., Giessen, 6300, Fed. Rep. Ger.).
 Inorganic Chemistry, 26(2), 217-18 (English) 1987. CODEN: INOCAJ.
 ISSN: 0020-1669.

AB Lanthanide(III) halides are reduced by alkali metals either to
 binary or ternary lanthanide(II) halides (NdCl₂, KNd₂Cl₅, Sm₄OCl₆)
 or to more reduced halides stabilized by interstitials (LuCl₁H_x,
 Cs₂Lu₇Cl₁₈C) or, in part, to the metal, the reaction thereby
 providing the necessary alkali halide to produce
 a ternary or quaternary lanthanide(III) halide (Na₃GdCl₆,
 Cs₂LiLuCl₆). Metallocthermic redns. are often superior to
 synproportionation reactions because they may proceed at
 considerably lower temps. and, furthermore, crystal growth is
 possible from the melt. Low-temp. modifications may be obtained as
 single crystals from such melts.

IT 12506-22-8P, **Europium bromide**
oxide (Eu₄Br₆O)
 (prepn. of single cryst.)

RN 12506-22-8 HCA

CN Europium bromide oxide (Eu₄Br₆O) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
Br	6	10097-32-2
Eu	4	7440-53-1

IT 7447-41-8, **Lithium chloride**, reactions
 (reaction of, with **cesium chloride** and
 lithium dithullium pentachloride or neodymium dichloride)
 RN 7447-41-8 HCA
 CN Lithium chloride (LiCl) (9CI) (CA INDEX NAME)

Cl-Li

IT 7647-14-5, **Sodium chloride**, reactions
 (reaction of, with ytterbium dichloride and **cesium chloride**)
 RN 7647-14-5 HCA
 CN Sodium chloride (NaCl) (9CI) (CA INDEX NAME)

Cl-Na

IT 7647-17-8, **Cesium chloride**, reactions
 (reactions of, with lanthanide chloride and alkali metal chlorides)
 RN 7647-17-8 HCA
 CN Cesium chloride (CsCl) (7CI, 8CI, 9CI) (CA INDEX NAME)

Cl-Cs

CC 78-9 (Inorganic Chemicals and Reactions)
 IT Rare earth metals, compounds
 (alkali halides, prepn. of, by alkali metal redn. of rare earth trihalides)
 IT 7440-00-8P, preparation
 (formation of, in reaction of **cesium chloride** and **lithium chloride** with neodymium dichloride)
 IT 7440-30-4P, preparation
 (formation of, in reaction of **lithium chloride** and **cesium chloride** with lithium dithullium pentachloride)
 IT 12051-60-4P, Gadolinium dipotassium pentachloride
 12506-22-8P, **Europium bromide**
 oxide (Eu₄Br₆O) 71619-19-7P, Digadolinium potassium heptachloride 106161-26-6P, Trilithium lutetium hexachloride 106191-36-0P 106266-28-8P, Praseodymium bromide (Pr₂Br₅) (prepn. of single cryst.)
 IT 25469-93-6, Neodymium dichloride 102499-28-5, Lithium dithullium pentachloride

(reaction of, with **cesium chloride** and
lithium chloride)

IT 7447-41-8, **Lithium chloride**, reactions
(reaction of, with **cesium chloride** and
lithium dithullium pentachloride or neodymium dichloride)

IT 13874-77-6, **Ytterbium dichloride**
(reaction of, with **sodium chloride** and
cesium chloride)

IT 7647-14-5, **Sodium chloride**, reactions
(reaction of, with ytterbium dichloride and **cesium chloride**)

IT 7647-17-8, **Cesium chloride**, reactions
(reactions of, with lanthanide chloride and alkali metal chlorides)

L18 ANSWER 18 OF 21 HCA COPYRIGHT 2006 ACS on STN

94:23664 Crystal and dielectric study of rare earth oxyfluorides
 $Na_4Ln(WNb_2)O_9F_5$. Elaatmani, M.; Ravez, J.; Hagenmuller, P. (Lab. Chim. Solide, Univ. Bordeaux, Talence, 33405, Fr.). Materials Research Bulletin, 15(7), 981-3 (French) 1980. CODEN: MRBUAC.
ISSN: 0025-5408.

AB Six new compds. with formula $Na_4Ln(WNb_2)O_9F_5$ ($Ln = Y, Nd, Eu, Gdd, Dy, Lu$) have been synthesized. The corresponding room temp. phases have a tetragonal symmetry and a chiloite-type structure. A low temp. a ferroelec.-paraelec. transition is detected for each compd. The Curie temp. increases with the size of the Ln^{3+} ion.

CC 76-6 (Electric Phenomena)
Section cross-reference(s): 78

ST rare earth fluoride oxide dielec structure; yttrium fluoride oxide dielec structure; neodymium fluoride oxide dielec structure; **europerium fluoride oxide** dielec structure; gadolinium fluoride oxide dielec structure; dysprosium fluoride oxide dielec structure; lutetium fluoride oxide dielec structure; dielec rare earth fluoride oxide; structure rare earth fluoride oxide; transition rare earth fluoride oxide; **sodium fluoride oxide** dielec structure; tungsten fluoride oxide dielec structure; niobium fluoride oxide dielec structure

L18 ANSWER 19 OF 21 HCA COPYRIGHT 2006 ACS on STN

66:59676 $LiEu_3O_4$, a new europium(II, III) compound with $LiSr_2EuO_4$ isostructure. Baernighausen, Hartmut (Univ. Freiburg/Br., Freiburg/Br., Fed. Rep. Ger.). Zeitschrift fuer Anorganische und Allgemeine Chemie, 349(5-6), 280-8 (German) 1967. CODEN: ZAACAB.
ISSN: 0044-2313.

AB $LiEu_3O_4$ was prep'd. by the redn. of Eu_3O_4Br with LiH at 600.degree. in vacuo or by the treatment of Eu_2O_3 with LiH in a $LiCl$ melt at 650.degree. for 7 hrs. in vacuo. The isostructural compd. $LiSr_2EuO_4$ which was prep'd. by the reaction of $LiEuO_2$ with SrO at

600-800.degree., confirmed that LiEu3O₄ contained 2 Eu²⁺ ions/formula unit. Cryst. LiEu3O₄ is orthorhombic with a 11.565, b 11.535, and c 3.480A.; the space group is Pbnm; Z = 4; and the d. is 7.539. LiEu3O₄ decompd. in air at 300-400.degree. to form Eu₂O₃ and .alpha.-LiEuO₂, and reacted with Br at 300-400.degree. to form EuOBr and LiEuO₂ or Eu₂O₃, EuOBr, and LiBr. Heating LiEu3O₄ in vacuo at 800-900.degree. gave Eu₃O₄.

IT 13843-47-5P

(from europium lithium oxide (LiEu3O₄) reaction with bromine)

RN 13843-47-5 HCA

CN Europium bromide oxide (EuBrO) (9CI) (CA INDEX NAME)

Br—Eu—O

CC 70 (Crystallization and Crystal Structure)

IT 13843-47-5P

(from europium lithium oxide (LiEu3O₄) reaction with bromine)

L18 ANSWER 20 OF 21 HCA COPYRIGHT 2006 ACS on STN

65:70902 Original Reference No. 65:13183g-h,13184a Rare earth oxyfluorides and mixed oxides, fluorides, and oxyfluorides with lithium. Vorres, Karl S.; Riviello, Richard (Purdue Univ., Lafayette, IN). Proc. Conf. Rare Earth Res., 4th, Phoenix, Ariz., Volume Date 1964 521-6 (English) 1965.

AB Oxyfluoride phases for Y and the rare earths (RE), La, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tin, Yb, and Lu were prep'd. by several methods. The x-ray powder diagram showed one or both of 2 phases in almost all cases. The lattice consts. (a and .alpha.) observed for oxyfluorides of Dy, Ho, and Er were 6.716 A., 33.07.degree.; 0.647 A., 33.15.degree.; 6.628 A., 33.14.degree., resp. Mixed fluorides of the general formula Li(RE)F₄ were prep'd. for Y and Gd through Lu. No reaction was observed with the lighter elements Nd, Sm, and Eu. The mixed fluorides were all isostructural and therefore should have the scheelite structure reported for LiYF₄. All attempts to prep. mixed oxyfluorides yielded unreacted materials or only rare earth oxyfluorides from the Li(RE)F₄ compds.

IT 50808-77-0, Europium fluoride oxide

(prepn. and crystal structure of)

RN 50808-77-0 HCA

CN Europium fluoride oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
F	x	14762-94-8

Eu | x | 7440-53-1

CC 14 (Inorganic Chemicals and Reactions)
 IT Lithium bromoselenite, LiSeO₂Br
 Lutetium lithium fluoride, LiLuF₄
 Potassium tetraoxobromodiselenite
 Selenites, tetraoxobromodi-
 Selenites, tetraoxochlorodi-
 Terbium lithium fluoride, LiTbF₄
 IT 12050-94-1, Cesium tetraoxochlorodiselenite 13825-07-5, Lanthanum fluoride oxide, LaOF 13825-08-6, Dysprosium fluoride oxide, DyOF 13825-13-3, Erbium fluoride oxide, ErOF 39427-25-3, Yttrium fluoride oxide 50808-77-0, **Europium** fluoride oxide 53096-22-3, Samarium fluoride oxide 111445-79-5, Thulium fluoride oxide 111445-80-8, Terbium fluoride oxide 111445-81-9, Lutetium fluoride oxide 111445-97-7, Gadolinium fluoride oxide 111445-98-8, Holmium fluoride oxide 111445-99-9, Lanthanum fluoride oxide 111446-01-6, Dysprosium fluoride oxide 111446-02-7, Erbium fluoride oxide 111446-03-8, Ytterbium fluoride oxide (prepn. and crystal structure of)
 IT 12048-89-4, Cesium tetraoxobromodiselenite 12048-95-2, Sodium bromoselenite, NaSeO₂Br 12051-03-5, Potassium tetraoxochlorodiselenite 23108-36-3, Lithium yttrium fluoride, LiYF₄ 26916-87-0, Gadolinium lithium fluoride, LiGdF₄ 26916-88-1, Lithium terbium fluoride, LiTbF₄ 26916-89-2, Dysprosium lithium fluoride, LiDyF₄ 26916-90-5, Holmium lithium fluoride, LiHoF₄ 26916-91-6, Erbium lithium fluoride, LiErF₄ 26916-92-7, Lithium thulium fluoride, LiTmF₄ 26916-93-8, Ytterbium lithium fluoride 26916-93-8, Lithium ytterbium fluoride, LiYbF₄ 26916-94-9, Lithium lutetium fluoride, LiLuF₄ (prepn. of)

L18 ANSWER 21 OF 21 HCA COPYRIGHT 2006 ACS on STN

49:10663 Original Reference No. 49:2146g-i The crystal structure of yttrium chloride and similar compounds. Templeton, D. H.; Carter, Giles F. (Univ. of California, Berkeley). Journal of Physical Chemistry, 58, 940-4 (Unavailable) 1954. CODEN: JPCHAX. ISSN: 0022-3654.

AB The crystal structure of YCl₃ was detd. from single crystal x-ray diffraction data. It was monoclinic with unit cell dimensions: a = 6.92, b = 11.94, c = 6.44 Å, β = 111.0°. The structure can be described as a slightly distorted NaCl type with 2/3 of the metal atoms omitted. The d. measured by flotation in mixts. of bromoform and butyl phthalate was 2.55 g./cc.; calcd. from x-ray data the d. was 2.61 g./cc. The following values of a, b, c, β , and vol. in Å³, resp., were obtained from powder analyses:

DyCl₃ 6.91, 11.97, 6.40 Å., 111.2.degree., 494; HoCl₃ 6.85, 11.85, 6.39 Å., 110.8.degree., 485; ErCl₃ 6.80, 11.79, 6.39 Å., 110.7.degree., 479; TmCl₃ 6.75, 11.73, 6.39 Å., 110.6.degree., 474; YbCl₃ 6.73, 11.65, 6.38 Å., 110.4.degree., 468; LuCl₃ 6.72, 11.60, 6.39 Å., 110.4.degree., 467; TlCl₃ 6.54, 11.33, 6.32 Å., 110.2.degree., 440; InCl₃ 6.41, 11.10, 6.31 Å., 109.8.degree., 422.

CC 2 (General and Physical Chemistry)

IT Europium fluoride, EuOF

Gadolinium fluoride, GdOF

Lanthanum fluorides, LaOF

Neodymium fluorides, NdOF

Praseodymium fluorides, PrOF

Samarium fluoride, SmDF

Terbium fluorides, TbOF

Thulium chlorides, TmCl₃

(crystal structure of)

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